

THE AMENDMENTS

In The Claims

1.-59. (Cancelled).

60. (Currently Amended). In a packet modification system for receiving packets, previously classified by a packet classification system, from one or more switch-side devices, modifying the packets to facilitate egress thereof from the packet modification system, and transmitting the modified packets to one or more network-side devices, a packet marker for selectively updating one or more quality of service (QoS) fields in such a modified packet, prior to egress thereof from the packet modification system, comprising:

one or more memories for holding (1) a table associating values for the one or more QoS fields of the packet with an index, (2) values of the one or more QoS fields taken from the packet prior to modification thereof by the packet modification system, and (3) one or more egress mark commands; and

a packet marker processor for utilizing a link associated with the packet by the packet classification system to access the one or more egress mark commands stored in the one or more memories, and executing such commands to selectively update the one or more QoS fields of the modified packet;

wherein the packet maker processor, upon executing these commands, individually selects, for each of the one or more QoS fields, the process used for updating the field from amongst at least the following processes:

updating the field using the value of the field taken from the packet prior to modification thereof by the packet modification system as stored in the one or more memories;

updating the field using a value obtained by performing a table lookup operation on the table stored in the one or more memories, using as an index in said operation a value obtained or derived from information associated with the packet by the packet classification system; and

updating the field using a value derived from at least one of the one or more egress mark commands;

wherein at least one of the one or more QoS fields of the packet are selected from the group ~~comprising~~consisting of a Virtual Local Area Network Priority (VLAN VPRI) field, a ~~Multilabel Protocol~~Multi-Protocol Label Switching ~~Exponent~~Experimental Use (MPLS EXP) field, and an Internet Protocol version 4 Type of Service/version 6 Traffic Class (IPv4ToS/IPv6TC) field.

61. (Previously Presented) The packet marker of claim 60 wherein the packet has a plurality of QoS fields, and the packet marker individually selects, for each of these plurality of fields, the method of updating the field.

62. (Previously Presented) The packet marker of claim 61 where the plurality of QoS fields comprises a VLAN VPRI field, a MPLS EXP field, and an IPv4ToS/IPv6TC field.

63. (Previously Presented) The packet marker of claim 60 wherein the information associated with the packet by the packet classification system from which the index is obtained or derived is egress mark control information associated with the packet by the packet classification system.

64. (Previously Presented) The packet marker of claim 60 wherein the information associated with the packet by the packet classification system from which the index is obtained or derived is a queue number associated with the packet by the packet classification system.

65. (Previously Presented) The packet marker of claim 63 wherein the egress mark control information associated with the packet by the packet classification system comprises a select portion and a mask portion, and the index is obtained or derived from the select portion of the egress mark control information.

66. (Previously Presented) The packet marker of claim 65 wherein the mask portion of the egress mark control information disables one or more of the one or more QoS fields of the modified packet from being updated.

67. (Previously Presented) The packet marker of claim 65 wherein the mask portion of the egress mark control information enables one or more of the one or more QoS fields of the modified packet to be updated.

68. (Currently Amended) In a packet modification system for receiving packets, previously classified by a packet classification system, from one or more switch-side devices, modifying the packets to facilitate egress thereof from the packet modification system, and

transmitting the modified packets to one or more network-side devices, a packet marker for selectively updating any one or more of Virtual Local Area Network Priority (VLAN VPRI), ~~Multi-Label Protocol~~ Multi-Protocol Label Switching ~~Exponent~~ Experimental Use (MPLS EXP), and Internet Protocol version 4 Type of Service/version 6 Traffic Class (IPv4ToS/IPv6TC) quality of service (QoS) fields in such a modified packet, prior to egress thereof from the packet modification system, comprising:

one or more memories for holding (1) a table associating values for the any one or more of ~~the~~ VLAN VPRI, MPLS EXP, and IPv4ToS/IPv6TC QoS fields with an index, (2) values of the any one or more of ~~the~~ VLAN VPRI, MPLS EXP, and IPv4ToS/IPv6TC QoS fields taken from the packet prior to modification thereof by the packet modification system, and (3) one or more egress mark commands; and

a packet marker processor for utilizing a link associated with the packet by the packet classification system to access the one or more egress mark commands stored in the one or more memories, and executing such commands to selectively update the any one or more of ~~the~~ VLAN VPRI, MPLS EXP, and IPv4ToS/IPv6TC QoS fields in the packet;

wherein the packet marker processor, upon executing these commands, individually selects, for each of the any one or more of ~~the~~ VLAN VPRI, MPLS EXP and IPv4ToS/IPv6TC QoS fields, the process used for updating the field from amongst at least the following processes:

updating the field using the value of the field taken from the packet prior to modification thereof by the packet modification system as stored in the one or more memories;

updating the field using a value obtained by performing a table lookup operation on the table stored in the one or more memories, using as an index in said operation a value obtained or derived from egress mark control information associated with the packet by the packet classification system; and

updating the field using a value derived from at least one of the one or more egress mark commands.

69. (Previously Presented) The packet marker of claim 68 wherein the egress mark control information associated with the packet by the packet classification system comprises a

select portion and a mask portion, and the index is obtained or derived from the select portion of the egress mark control information.

70. (Previously Presented) The packet marker of claim 69 wherein the mask portion of the egress mark control information disables one or more of the one or more QoS fields of the modified packet from being updated.

71. (Previously Presented) The packet marker of claim 70 wherein the mask portion of the egress mark control information enables one or more of the one or more QoS fields of the modified packet to be updated.

72. (Currently Amended) The packet marker of claim 68 where the packet marker processing also selects from the following process when individually selecting the process used for updating each of the any one or more of VLAN VPRI, MPLS EXP, and IPv4ToS/IPv6TC QoS fields of the packet:

updating the field using a value obtained by performing a table lookup operation on the table stored in the one or more memories, using as an index in said operation a value obtained or derived from a queue number associated with the packet by the packet classification system.

73. (Currently Amended) In a packet modification system for receiving packets, previously classified by a packet classification system, from one or more switch-side devices, modifying the packets to facilitate egress thereof from the packet modification system, and transmitting the modified packets to one or more network-side devices, a method of selectively updating one or more quality of service (QoS) fields in such a modified packet, prior to egress thereof from the packet modification system, comprising:

holding in one or more memories (1) a table associating values for the one or more QoS fields of the packet with an index, (2) values of the one or more QoS fields of the packet prior to modification thereof by the packet modification system, and (3) one or more egress mark commands; and

selectively updating the one or more QoS fields of the packet, comprising individually selecting, for each such field, the process used for updating the field from amongst at least the following processes:

updating the field using the value of the field taken from the packet prior to modification thereof by the packet modification system as stored in the one or more memories;

updating the field using a value obtained by performing a table lookup operation on the table stored in the one or more memories, using as an index in said operation a value obtained or derived from information associated with the packet by the packet classification system; and

updating the field using a value derived from at least one of the one or more egress mark commands;

wherein at least one of the one or more QoS fields of the packet are selected from the group ~~comprising~~consisting of a Virtual Local Area Network Priority (VLAN VPRI) field, a ~~Multi-Label Protocol~~Multi-Protocol Label Switching ~~Exponent~~Experimental Use (MPLS EXP) field, and an Internet Protocol version 4 Type of Service/version 6 Traffic Class (IPv4ToS/IPv6TC) field.

74. (Previously Presented) The method of claim 73 wherein the packet has a plurality of QoS fields, and the selective updating step comprises individually selecting, for each of these plurality of fields, the process of updating the field.

75. (Previously Presented) The method of claim 74 where the plurality of QoS fields comprises a VLAN VPRI field, a MPLS EXP field, and an IPv4ToS/IPv6TC field.

76. (Previously Presented) The method of claim 73 wherein the information associated with the packet by the packet classification system from which the index is obtained or derived is egress mark control information associated with the packet by the packet classification system.

77. (Previously Presented) The method of claim 73 wherein the information associated with the packet by the packet classification system from which the index is obtained or derived is a queue number associated with the packet by the packet classification system.

78. (Previously Presented) The method of claim 73 wherein the egress mark control information associated with the packet by the packet classification system comprises a select portion and a mask portion, and the index is obtained or derived from the select portion of the egress mark control information.

79. (Previously Presented) The method of claim 78 wherein the mask portion of the egress mark control information disables one or more of the one or more QoS fields of the modified packet from being updated.

80. (Previously Presented) The method of claim 78 wherein the mask portion of the egress mark control information enables one or more of the one or more QoS fields of the modified packet to be updated.